

Amended Claims (Clean Form)

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5 ^{5/27} A urethane elastomer which is the reaction product of a prepolymer (P) which is the reaction product of

a) methylene diphenylisocyanate or a prepolymer of methylene diphenylisocyanate and an about 500-1000 equivalent weight polytetramethylene ether glycol or polyoxypropylene/polyoxyethylene diol or triol having at least 21% residual NCO,

10 b) polytetramethylene ether glycol of about 500 to 1000 equivalent weight, and

c) a polyoxypropylene/polyoxyethylene triol or polyoxypropylene triol of about 1300 to 2000 equivalent weight,

15 ^{B2} _{Cont} the percentage weight/weight in the prepolymer (P) being about 32 to 72% of (a), about 52 to 22% of (b), and about 6 to 15% of (c), and the percentage of residual NCO in the prepolymer (P) being about 6 to 18% by weight,

which is cured at room temperature with an approximately stoichiometric equivalent of a liquid curative consisting essentially of the following components:

20 (1) a polyoxypropylene/-polyoxyethylene diol of about 1000 to 2000 equivalent weight, (2) a polyoxypropylene/-polyoxyethylene triol of about 1300 to 2000 equivalent weight, (3) a chain extender having an equivalent weight of about 25 to 125, (4) a room-temperature liquid stable prepolymer (P) having a 6 to 18% residual NCO, (5) a diluent, (6) a degassing aid, and (7) a urethane catalyst, the relative amounts weight/weight being respectively 30 - 90%, 3 - 20%, 5 - 30%, 0 - 30%, 0 - 15%, 0.001 - 0.05%, and 0.01 - 0.5%.

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5 The urethane elastomer of Claim 34 wherein the percentage of residual NCO in the prepolymer(P) is about 11.5-13.5% weight/weight and which has a room-temperature viscosity of about 550-50000 cps, and which results in a cured urethane elastomer having the following properties after mixing and curing for seven days at room temperature:

Tensile strength (ASTM Method D-412)	about 1300-2700 psi
Elongation (ASTM Method D-412)	about 250-700%
Die C Tear (ASTM Method D-695)	about 140-400 pli
10 Split Tear (ASTM Method D-1938)	about 20-100 pli
Rebound (ASTM Method D-2632)	about 45-65%
Shore A Hardness (ASTM Method D-2240)	about 70-95
Gel time (25°C)	about 14-40 min..

15 The urethane elastomer of Claim 35 wherein the percentage of residual NCO is about 11.5-13.5% by weight, the prepolymer (P) has a room temperature viscosity of about 3500 to 5000 cps, and the amounts of (4) and (5) in the curative are respectively 10-20 and 5-15% weight/weight.

20 The urethane elastomer of Claim 35 wherein the amounts of (4) and (5) in the curative are respectively 10-20 and 5-15% weight/weight.

The urethane elastomer of Claim 35 wherein the prepolymer (P) is present in an up to about 13% stoichiometric excess with respect to the curative.

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The urethane elastomer of Claim 38 wherein the prepolymer (P) is present in about a 2 to 7% stoichiometric excess with respect to the curative.

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5 The urethane elastomer of Claim 34 wherein the prepolymer (P) consists of about 54%, about 36%, and about 10% percent weight/weight of the stable prepolymer (P) ingredients a), b), and c) respectively.

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10 The urethane elastomer of Claim 40 which is cured with an approximately stoichiometric equivalent of a curative consisting essentially of (1) a polyoxypropylene/-polyoxyethylene diol of about 1000 to 2000 equivalent weight, (2) a polyoxypropylene/-polyoxyethylene triol of about 1300 to 2000 equivalent weight, (3) a chain extender having an equivalent weight of about 25 to 125, (4) a room-temperature liquid stable prepolymer (P) having a 11.5 to 13.5% residual NCO, (5) a diluent, (6) a degassing aid, and (7) a urethane catalyst, the relative amounts weight/weight being respectively approximately 54%, 13%, 10%, 15%, 8%, 0.005% and 0.006%.

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20 The urethane elastomer of Claim 41 wherein the curative has a viscosity at room temperature of about 3000-5000 cps and a specific gravity of about 1.05-1.08.

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The urethane elastomer of Claim 42 wherein the prepolymer (P) is present in an up to about 13% stoichiometric excess with respect to the curative.

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C2* The urethane elastomer of Claim 43 the prepolymer (P) is present in about a 2 to 7% stoichiometric excess with respect to the curative.

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5 The urethane elastomer of Claim 44 wherein the properties after mixing and curing for seven days at room temperature are as follows:

Tensile strength (ASTM Method D-412) about 1550psi

Elongation (ASTM Method D-412) about 500%

Die C Tear (ASTM Method D-695) about 250 pli

10 Split Tear (ASTM Method D-1938) about 45 pli

Rebound (ASTM Method D-2632) about 55%

Shore A Hardness (ASTM Method D-2240) about 80

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Conda* Gel time (25°C) about 20-30 min..

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15 The urethane elastomer of Claim 45 wherein the degassing aid is a silicone emulsion.

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The urethane elastomer of Claim 45 wherein the catalyst is a mixture of triethylene diamine and 2,3-dimethyltetrahydropyrimidine or bismuth neodecanoate.

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The urethane elastomer of Claim 45 wherein the degassing aid is a silicone emulsion and the catalyst is a mixture of triethylene diamine and 2,3-dimethyltetrahydropyrimidine or bismuth neodecanoate.

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3 The kit of Claim 49 wherein the percentage of residual NCO in the prepolymer(P) is about 11.5-13.5% weight/weight and wherein the prepolymer (P) has a room temperature viscosity of about 3500 to 5000 cps.

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5 The kit of Claim 51 wherein the amounts of (4) and (5) in the separately packaged liquid curative are respectively 10-20 and 5-15% weight/weight.

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10 The kit of Claim 51 wherein the separately packaged liquid curative consists essentially of the stated components in the following approximate percentages: 54%, 13%, 10%, 15%, 8%, .005%, and 0.006% weight/weight in the curative respectively and has a viscosity at room temperature of about 3000 to 5000 cps and a specific gravity of about 1.05 - 1.08.

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15 The kit of Claim 53 wherein the percentages weight/weight of a), b), and c) in the prepolymer (P) are respectively about 54%, about 36%, and about 10%.